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1.Safety Precautions

Definition of warning symbols

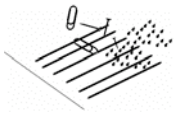
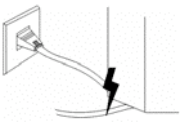
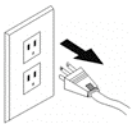
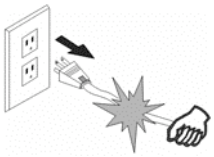
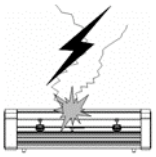
	WARNING	Any improper operation may possibly result in hazard of life or damages of equipment.
	CAUTION	Any improper operation may possibly result in hazard of life or damages of equipment.

Definition of sign symbols:

	The symbol in the left warns you of potential electric shock. This symbol is prepared to arouse operator's attention. Symbols in triangles specify the cases to be attentive.
	The symbol in the left tells you no detachment. This symbol specifies the activity mentioned is forbidden. Symbols in the circle specifie the acts to be forbidden.

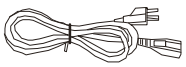
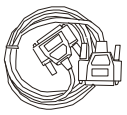
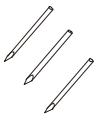
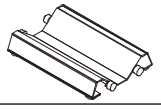
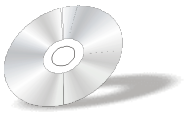
	WARNING
	Do not use the power source not meeting rating voltage. Otherwise fire or electric shock may result.
	If machine gives out smoke or unpleasant smell or abnormal noise, **please stop using it immediately.** Continuing using it may result in fire or electric shock.
	Do not put out the plug when power is on. This would damage the machine or result in fire or electric shock.
	Make sure the machine is grounded properly. Or electric shock or mechanical default may result.
	Do not detach, repair or reconstruct the machine. Otherwise, fire, electric shock or hazard of life may result.

⚠	CAUTION

⊘	**Do not leak any liquid or drop metal into the machine.** Such leak may result in fire.	
⊘	**Do not touch knife-top with your finger** Such act may result injury or damage of knife head.	
⊘	**Do not damage or random replace the supplied power cable. Do not excessively bend, pull, bundle the power cable or place weight on it** This act may cause damage to power source, fire or electric shock.	
⊘	**If you are not going to use the machine for a long time, please unplug the power cable from power source.** Or fire might happen.	
⊘	**When operating the machine, do not place either of your hands on capstan.** Or this might cause injury.	
❗	**Place the machine on a stable surface.** Or the machine may fall and get damaged.	
❗	**To unplug the power cable from receptacle, please hold the plug instead of the cable.** Strong pulling of the cable possibly results in electric shock or fire.	
❗	**Any operation is forbidden in case of storm or lightning.** This will prevent potential damage of machine.	

2. Standard Accessories

Please first check the following list of accessories after unpacking and contact re-seller or us (manufacturer) if you find anything missing from this list.

Serial No.	Item	Quantity	Icon
1	Power Cable	1	
2	RS232 Signal Cable & USB Cable	2	
3	Rotary tool apron	1	
4	High-speed tungsten steel knife	3	
5	Paper-tube bracket	1	
6	ArtCut software （Optional）	1	
7	CD Diskette	1	

Appendix: Vertical Foot Stand and Installation Sketch Map
（Only used for the above 900 cutting plotters）

WARNING -·STAND IS HEAVY – WARNING
At least 2 People Required For Assembly

3. Basic Operation

3.1 Installation and Connection

WARNING

Make sure this machine is grounded.

Or electric shock/mechanic defaults may result.

Do not use the power source not meeting the voltage rating.

Use the wrong power source will result in fire or electric shock.

Do not put out the plug when the power is on

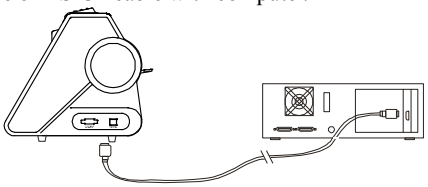
To avoid damage done to the machine.

Place machine on a stable surface.

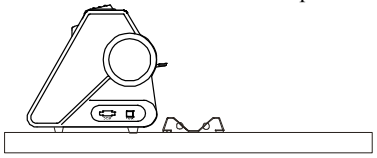
Or machine may fall and get damaged.

3.1.1 Place the cutter in a horizontal and roomy place.

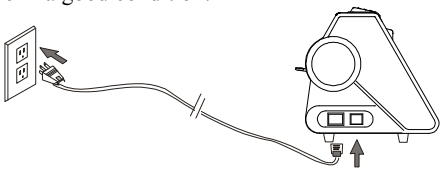
3.1.2 Connect USB cable or RS232 cable with computer.



3.1.3 Place the bracket behind the host and ensure it is parallel to the host.



3.1.4 Check voltage of the power source and whether it is grounded. Do not connect to power until all are in a good condition.



3.2 Tool Installationh

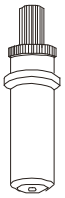
CAUTION

Do not touch Knife-top with finger.

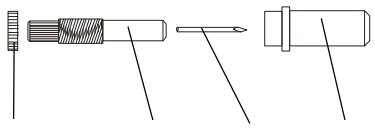
It will cause injury or damage of Knife

3.2.1 Fit cutter into rotary tool, the knife and tool are as shown in the following drawings:

Outside drawing

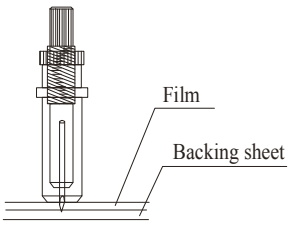


Explode view

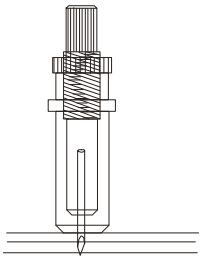


Knife adjusting screw Knife handle Knife Knife sheath

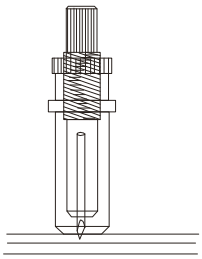
3.2.2 Adjust the protruding length of the knife-top as required for specific cutting media.



Correct



Too long Protruding Length of knife point

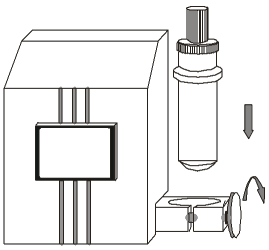


Too short Protruding Length of knife point

3.2.3 1) Loosen the screw of tool carrier.

2) Assembly the tool with the knife into the tool carrier.

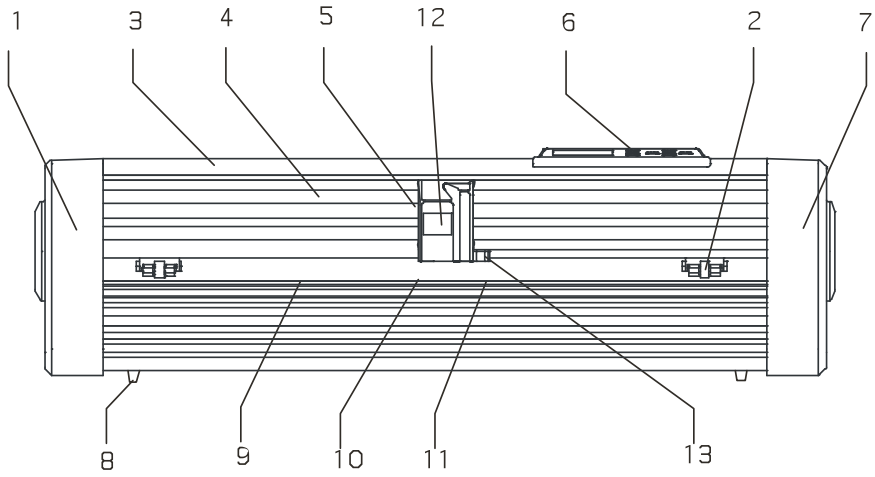
3) When the tool is in appropriate position screw it and fix the screw.



4. Cutting Plotter Operating Instructions

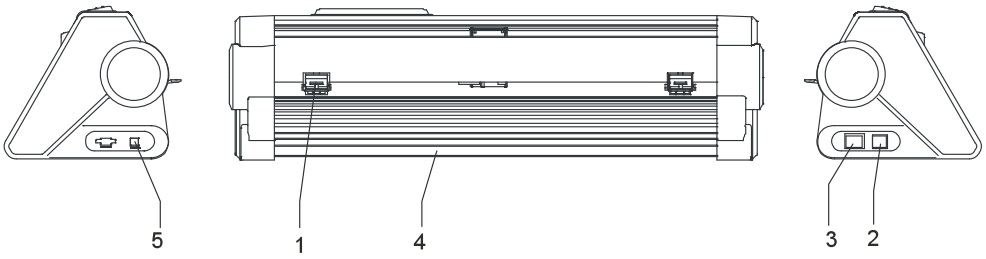
4.1 Names and Functions of parts

4.1.1Front View



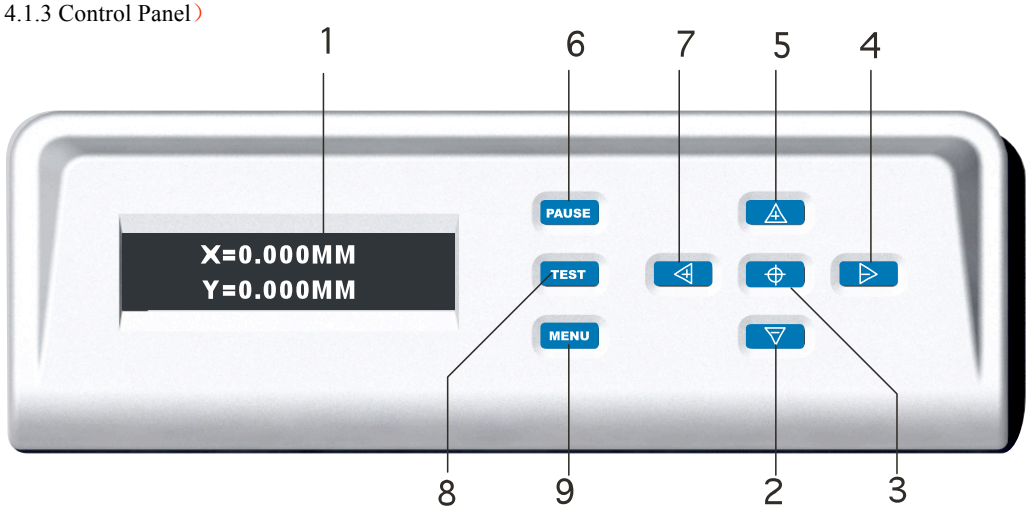
1 Left cab*i*net
2 Paperweight wheel
3 Upper cover
4 Beam
5 Tooth profile transmission tool
6 Control Keypad LCD (Liquid Crystal Display)
7 Right cabinet
8 Foot cushion
9 Transmission Shaft
10 Scale
11 Strip cushion
12 Slider
13 Knife clip

4.1.2 Back view



1 Handle
2 Power supply
3 Power supply groove
4 Baseboard (containing main board, power source)
5 USB wire groove

4.1.3 Control Panel）



1 LCD (Liquid Crystal Display)

2 Paper-feeding button

3 Origin setting button

4 Rightward button

5 Paper-withdraw button

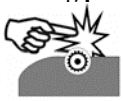
6 Pause/Testing button

7 Leftward button

8 Knife-raising / Knife-dropping button

9 Systemic parameter setting button

4.2 Basic operation

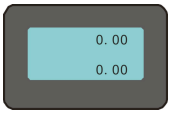
	CAUTION
	When switching on the power, make sure your hands and other articles are out of reach of such running parts as Main shaft and slider to prevent injury. 

4.2.1 **Turn on the machine**

4.2.1.1 Check whether the power is in OFF position.

4.2.1.2 Plug the cable into the host power source, press the power button on/off on the left.

4.2.1.3 LCD in the control panel is ON and displays the initializing process of the host and shows following information:



Note:We will not have further notice for any internal change of configuration.

4.2.1.4 When initialization is done, machine is ready for computer connection.

4.2.3 Trial run (adjusting knife press and tool)

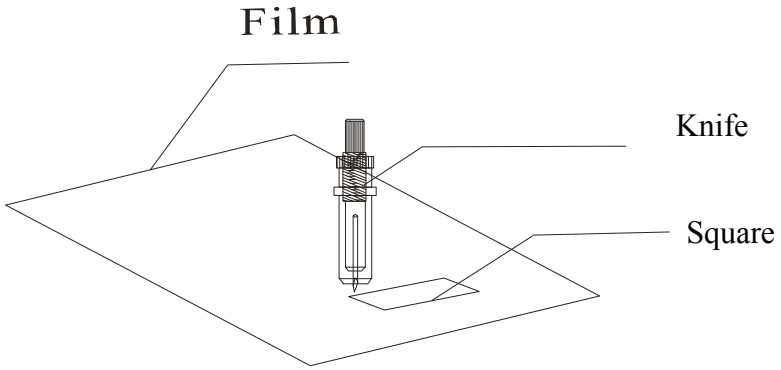
CAUTION

Do not touch Knife-top with finger

Otherwise cause Injury/damage Knife

Quality of knife immediately relates to cutting precision and life of machine.To make sure quality work, please use the standard knives we recommend.Do not use poor quality knives.

4.2.3.1 In manual mode,keep pressing "PAUSE" key,machine will cut a small rectangle automatically.



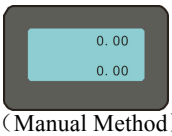
4.2.3.2 Try to tear out the rectangle. If the rectangle cannot be tore out easily, it means cutting is not effective. May be the cutting pressure is not enough or knife exposure is not long enough.If it cuts through the backing paper, it means cutting pressure is too high or knife exposure is too long. According to this testing result, one can adjust the cutting pressure and knife exposure until both values are just right.

4.2.3.3 For Knife pressure adjustment（please refer to session 4.3.6.1for detail）

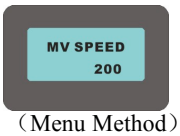
4.3 Operation Instructions

4.3.1 Display methords

Two methods included in this mode: manual method and parameter menu method.Press "MENU" key exchange.



（Manual Method）



（Menu Method）

Note: After switching on, machine will come into manual method automaticly.

4.3.1.1 Manual Method

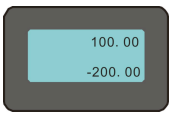
In manual method, it can be used to adjust position of cutting head and setting of relative position of origin.In this mode,the Computer will transfer data to the machine.

4.3.1.2 Parameter Menu Method

In the parameter menu mode,we can setup the value of parameters from the menu.In this mode,if the Computer will transfer data to the machine.After cutting finishes, machine will automatically returns to manual method.

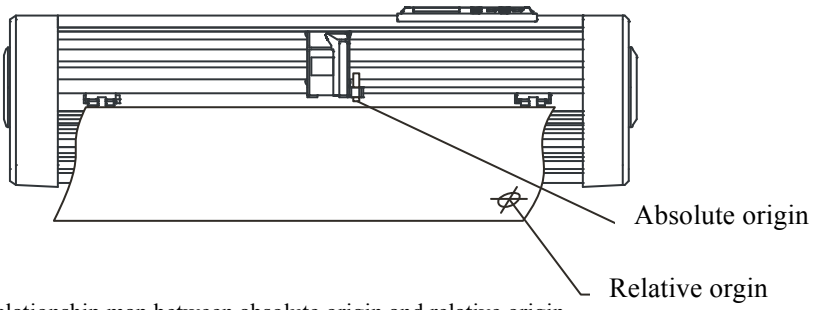
4.3.2 Moving knife-top

In manual method, press " " two directional keys, cutting head will move to left and right, press " " keys,Y axis will move up and down. X/Y values will also be displayed in the LCD panel.



4.3.3 Setting origin of plotting

In manual method, when cutting head move to the starting point, press origin setting key " ",X,Y value will be changed to Zero.New relative origin is set.When start cutting again, machine will start from the new relative origin position.



Relationship map between absolute origin and relative origin

4.3.4 Raising knife, dropping knife

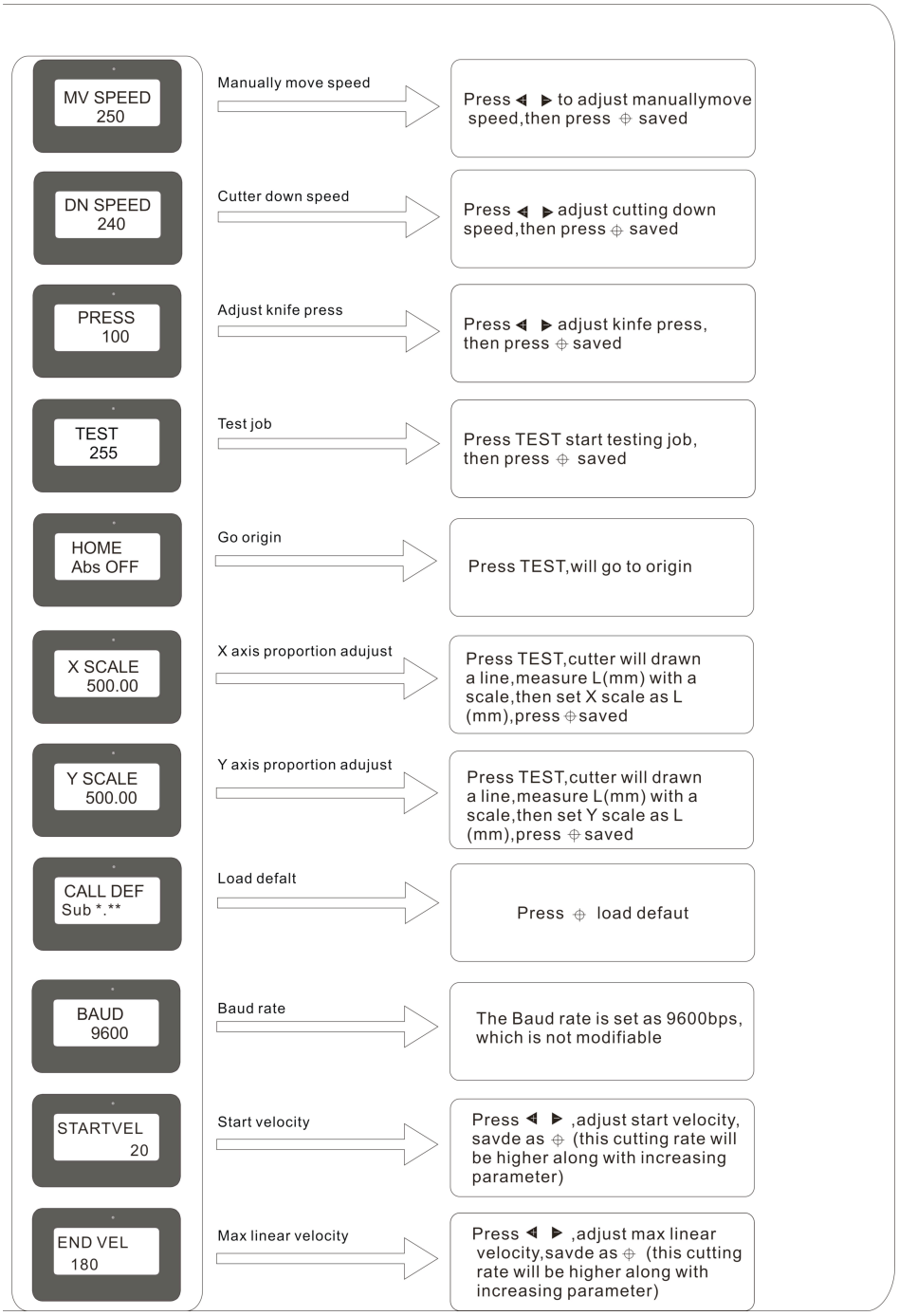
In manual method, press down TEST key,cutting knife with move up and down by turns.

4.3.5 System setting and save

4.3.5.1 In manual method, press" MENU "key to get into the menu mode,you can change parameter setting in this mode,LCD screen will display system parameter values,press

" or "key to select functions continuously,press" or "can change each value, after change press" "key to save changed value, directly press MENU will save current changed value settings. When switch on machine next time, machine will automatically use the former setting value for default setting.

4.3.6 System Parameters setting diagram:

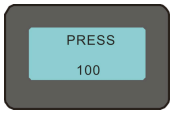

MV SPEED 250
Manually move speed
Press ◀ ▶ to adjust manuallymove speed,then press ⊕ saved
DN SPEED 240
Cutter down speed
Press ◀ ▶ adjust cutting down speed,then press ⊕ saved
PRESS 100
Adjust knife press
Press ◀ ▶ adjust kinfe press, then press ⊕ saved
TEST 255
Test job
Press TEST start testing job, then press ⊕ saved
HOME Abs OFF
Go origin
Press TEST,will go to origin
X SCALE 500.00
X axis proportion adujust
Press TEST,cutter will drawn a line,measure L(mm) with a scale,then set X scale as L (mm),press ⊕saved
Y SCALE 500.00
Y axis proportion adujust
Press TEST,cutter will drawn a line,measure L(mm) with a scale,then set Y scale as L (mm),press ⊕ saved
CALL DEF Sub *.**
Load defalt
Press ⊕ load defaut
BAUD 9600
Baud rate
The Baud rate is set as 9600bps, which is not modifiable
STARTVEL 20
Start velocity
Press ◀ ▶ ,adjust start velocity, savde as ⊕ (this cutting rate will be higher along with increasing parameter)
END VEL 180
Max linear velocity
Press ◀ ▶ ,adjust max linear velocity,savde as ⊕ (this cutting rate will be higher along with increasing parameter)

4.3.6.1 Demonstration of parameter settings for different states

4.3.6.1.1 Setting Knife Pressure

A. Preset Knife Pressure

In Manual mothord, press "MENU"key,go into parameter MENU selection,press or " " page down to next page,press " " to increase Knife pressure,press " " to decrease Knife pressure,default ex-factory value is 80g(Knife press can be set between 30-180g range), after finish adjustment, press " " key to keep changed setting.



B. Adjust Knife Pressure

When machine is in operation,if knife pressure is not right,user can press "PAUSE" key to pause the machine,and adjust the knife pressure to most suitable value, press "PAUSE" again to start the machine.

5. Technical Specification

Type	CA630	CA1200
Bracket and Paper feeding mode	Table-type M Paper foot stool	Vertical feed paper foot stool
Main Board	16bits CPU,1MB high-speed cache memory	
Control Panel	2*16character LCD,8-key soft keypad	
Drive	Stepping Motor,Micro-step driver	
Positioning mode	Bounded system, arbitrary origin setting	
Max paper feed width	730mm	1300mm
Max Cutting width	630mm	1200mm
Max Cutting speed	300mm/s	
Knife Pressure	0-500g（digital adjustment）	
Repeatable precision	＜±0.2mm (3M)	
Type of tool	Hard alloy steel knife	
Type of plotting pen	Atom plot pen and poster pen with diameter of 11.4mm, either watery or oily	
Plotting instruction	HT-GL（TM）/DMPL	
Interface	RS232/USB2.0	
Power source	(AC110V~AC220V) ±10%,50Hz~60Hz	
Power Consumption	<100VA	
Operating environment	temperature+5℃-+35℃， Relative temperature 30% ~70%	
Package size	1030×375×380mm	1590×375×451mm
Transporting Wt	18kg	36.7kg

No further notification will be given if any of the above parameters changes.

6. Troubleshooting

6.1 Question: Why can not the knife in the knife seat be pulled out sometimes?

Answer: As the knife sheath is made of accurate size, fineness of handle and conical degree of knife tail are important factors to guarantee flexible rotating of the knife. Use of the knives other than we have confirmed possibly result in permanent damage of precise parts in the sheath. When encountering such problems, please consult the designative seller or maintenance center.

6.2 Question: Why the characters below 1cm be deformed?

Answer: When graving small characters,please set sharp-angle compensation in the software,for example, in Artcut plotting software：

(1). Click“plotting output”once, a plotting output picture will pop up。

(2). Click“set”once, a picture of setting plotter will pop up。

(3). Click“compensation setting”, a dialog box will pop up。

(4). Select“sharp-angle compensation”, adjust the value to required level。

The compensation ranges within 0.1 0.7, more often we set it to be 0.25. in addition, the plotting speed of the cutter shall be set below 20。

6.3 Question: Why do the paper deviate when it runs by a large margin?

Answer: The paper feed bracket containing paper roll shall be completely parallel to paperweight wheel, for big roll of materials, loosen it prior graving to prevent excessive obstruction when plotting or graving. For the machines with four paperweight wheels, when plotting big image or characters back and forth, use the two paperweight wheels at sides instead of press the four down simultaneously. Unequal abrasion of the two wheels also may result in deviation of the paper; in worse case replacing wheels is needed。

6.4 Question: Why does lock up happen in plotting output?

Answer：(1). Exterior input voltage is too low, the plotter will restart thus lock up happen。

(2).When disturbance of exterior input voltage is too high, lock up may happen, to resolve it you can use purified regulated power source。

6.5 Question: Why does the machine feel tingle?

Answer: The machine might be improperly grounded, make sure central line of the power source grounded。

6.6 Question: Why does the job feel not smooth with sharp-angle raised when plotting?

Answer: (1). The protruding length of knife top is too long, please adjust it as required.

(2). The knife is abraded, replace it。

6.7 Question: Why does the plotter first scratch a line before plotting?

Answer: Because the machine illegally escape last time, there is still knife-dropping instruction existing in the memory of plotter. To resolve it power off the machine and turn it on again.

6.8 Question: No LCD display or a black row of blocks are displayed?

Answer: (1). In case of no display, check whether the power work well.

(2). If black blocks are displayed, check whether voltage is at required level. If troubles remain after the above operation, please contact maintenance center.

6.9 Question: Why can not some characters close in strokes when it is plotting?

Answer: Because the knife of the plotter is eccentric knife with a eccentric value, to resolve it, set closing compensation in the software.For example,in Wentai software:

(1). Click “plotting output” once, a plotting output picture will pop up.

(2). Click “set” once, a picture of setting plotter will pop up.

(3). Click “compensation setting” a dialog box will pop up.

(4). Select closing compensation, adjust the value to required level, generally the value is set to be 0.5.

6.10 Question: Why the machines have missed some pave of letter when cutting?

Answer (1). Check the machine if it presses enough.

(2). Reinstall the software.

(3). Chook the head of the knife.

(4). If the problem is still in existence, please contact with repair center.

6.11 Question: Why do some nicks deep, while some shallow when cutting?

Answer: As CA employs upscale soft PVC materials as knife strip cushion to protect knife. But long period using it may produce a trace therefore roughing the stripe cushion, so some nicks become deep, while some become shallow. To resolve it replace a stripe cushion. If is not so worse, adjust knife as described in section 3.2.B, increase knife press (some 120 -150).

6.12 Question: Why can not the plotter run when it is outputting?

Answer：(1). Check whether the plotter is properly connected with computer. CA is connected with COM1 or COM2 of computer;Check whether the set ports are conformed to those connected。

(2). Check whether the plotter is in online state, namely whether the LCD displays “ON LINE”.

(3). Check whether the encryption card of software is properly. If not please turn off the power and reinstall it. Check driving program of the plotter is for CA series.

6.13 Question: Why can not the instant-glue be taken off?

Answer: (1). Perform trial run prior output, adjust press to appropriate level.

(2). Check whether the knife is used too long, or whether the knife top is broken. For new ones the nick is thin in the instant-glue, while for old ones the nick is thick and impressive. To resolve it replace it with a new knife.

6.14 Question: What is attentive when cutting big characters?

Answer: (1). When cutting big characters, the system can automatically How to setup page, you can cut a big character in several pages, but it is notable that the setting of output width shall be conformed to the width of instant-glue in addition, when cutting big characters and output it, you should widen pages or set seaming distance.

(2). When you use the special wide machine to cut the big characters, especially the long big characters Before cutting input, you shall instead the paper first look careful the paper if the paper deviates then deviate the big characters into some pouts to input, it can make it won’t deviate and waste paper.

6.15 Question: How do we maintain the plotter?

Answer: CA series plotter all employ upscale oil bearing from Japan, no oil is needed even it works for a long time. After operation everyday, clean the dust with soft brush. The glue remaining in engine base can be cleaned with alcohol. If frequently operated in dusty environment above two years, please have maintenance technicians clean the dust in machine. If plotting precision degrades, the maintenance of running parts are desirable (firming and replacing the abraded parts).

6.16 Question: Why does the plotter is out of our control sometimes?

Answer: Maybe while transporting or using it,the signal line is improperly connected,open the machine properly plug all lines.If the problem still fails to be solved after the above operation, please contact local agent or maintenance center

6.17 Question: Why does the plotter come to halt?

Answer: Because it encounters vibrate for a long period, or has been used for a long period, or is affected by temperature, so dielectric displacement happen to the servo driving board, therefore resulting in halt, please contact local agent or customer maintenance center.